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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,561	11/24/2003	Myoung-Kee Baek	42165-0009	1881
30827	7590	02/08/2006		
MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER EVANISKO, LESLIE J	
			ART UNIT 2854	PAPER NUMBER

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/718,561	Applicant(s) BAEK ET AL.	
	Examiner Leslie J. Evanisko	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: marked-up copies of various figures from
US 5127330 + US 2003/0084796

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The replacement sheets of drawings were received on June 10, 2005.
These drawings are approved by the Examiner.

Claim Objections

3. Claims 2-4 are objected to because of the following informalities:

With respect to claim 2, it is suggested that the term "including" in line 2 be deleted to provide less awkward and seemingly redundant claim language.

Appropriate correction and/or clarification is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 5-7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki et al. (US 5,127,330). Okazaki et al. teach a method as recited comprising the steps of providing a cliché 1 having at least a first groove structure having a first width and a second groove structure having a second width, filling a resist material (see column 4, lines 43-46) into the first and second groove structure of the cliché, and applying the resist material filled into the first and second groove structure of the cliché onto an etching object layer (i.e., surface of substrate 6 that will be later etched--see, for example, column 9, lines 27-29) of a substrate 6. Note that although Okazaki et al. is silent with respect to whether the second groove structure width is divided into multiples of the first width and an interval therebetween, note it

appears that the cliché shown in Figures 6A-6D, 7A-7E, and 8A-8C of Okazaki et al. meet that relationship--as pointed out by the Examiner in the marked-up copy of Figures 6B, 7C, and 8B attached to this Office Action, which illustrates what structure the Examiner is considering to be the first and second groove structures and interval as recited. Regardless, it would have been obvious to one of ordinary skill in the art to provide a cliché having first and second groove structures with the size relationship as recited, as the particular sizes and arrangements of the groove structures of the cliché are dependent upon such factors as the particular configuration of the pattern desired to be printed, the desired thickness of pattern to be printed, the viscosity of the material being printed on the substrate, etc.

With respect to claim 5, note Okazaki et al. teach applying the resist material 3 onto an etching object layer comprises contacting and rotating a printing roll 9 onto the cliché 1 to transfer the resist material to a surface of the printing roll and contacting the resist material formed on the surface of the printing roll to transfer the material to an etching object layer of the substrate 6, as shown in Figures 7D-7E and 8B-8C in particular.

With respect to claim 6, note Okazaki et al. teach applying the resist material onto the etching object layer can also be accomplished by a direct contact printing step as shown in Figures 1A-1E and 6A-6D and described in column 4, line 54 through column 5, line 23, and again in column 7, lines 6-12. In particular, the applying step shown in Figures 1E and 6D in particular

includes contacting the etching object layer with the cliché and detaching the substrate from the cliché to transfer the resist material from the grooves to the etching object layer. Note that the direct contact of the cliché and substrate would inherently include application of pressure to the substrate to some extent.

With respect to claim 7, note Okazaki et al. teach the substrate including the etching object layer can be comprised of a metal in column 8, lines 29-34.

With respect to claim 10, Okazaki et al. teach depositing the resist material 3 along the entire surface of the cliché 1 and contacting a doctor blade 4 onto the surface of the cliché to flatten the resist material and fill the resist material into the grooves and remove the resist material that remains on the surface. See Figures 1C-1, 6B, and 7B and column 4, lines 54-61 in particular.

7. Claims 2-4 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki et al. (US 5,127,330) as applied to claims 1, 5-7, and 10 above, and further in view of Kleist (US 5,662,041).

Okazaki et al. teach a method for forming a pattern of a LCD device having all of the steps as recited, with the exception of the particular details of how the cliché is prepared and formed. Although it is noted that Okazaki et al. is silent with respect to whether the cliché includes providing a buffer layer and patterning the buffer layer, providing a printing cliché including a buffer layer

made of metal or organic material to be patterned is well known in the art as exemplified by Kleist in column 1, lines 48-62 and column 3, lines 19-37. In view of this teaching, it would have been obvious to one of ordinary skill in the art to provide the cliché of Okazaki et al. with a buffer layer to be patterned as taught by Kleist to provide simple manufacturing of a printing cliché for relatively short production runs.

With respect to claims 11 and 12, note Okazaki et al. as modified by Kleist render obvious the method(s) of forming a pattern of an LCD device as recited. Note, in particular, the above comments with respect to claims 1, 5, 6, and 10.

8. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okazaki et al. as applied to claims 1, 5-7, and 10 above, and further in view of Choi et al. (US 2002/0109799 A1). Okazaki et al. teach a method as recited with the exception of the etching object layer being an organic layer or including SiNx or SiOx as recited. However, note Choi et al. teach a liquid crystal display device including an insulating layer to be etched which is made of such materials as SiNx, SiO₂, or organic material is well known in the art, as exemplified by paragraph [0036] of Choi et al. in particular. In view of this teaching, it would have been obvious to provide the etching object layer of Okazaki et al. to include an organic layer as taught by Choi et al. as it would

10. Claims 1, 5-8, and 10 are rejected under 35 U.S.C. 103(a) as being obvious over Kwon et al. (US 2003/0084796A1).

Kwon et al. teach a method for forming a pattern of a LCD device comprising providing a cliché 100 having at least a first groove structure with a first width and a second groove structure with a second width, filling a “resist” material 104 (see paragraph [0034]) into the first and second groove structures of the cliché and applying the resist material onto an etching object layer 121 of a substrate 120. See Figure 3(a)-(c) and 5 and paragraphs [0029]-[0034] in particular. Furthermore, note Kwon et al. teach the printing ink 104 functions as a “resist” material as broadly recited in paragraph [0034] in particular. Although Kwon et al. does not specifically teach the particular groove width size relationship recited, it appears that the cliché shown in Figures 3A and 5 meet that relationship--as pointed out by the Examiner in the marked-up copy of Figures 3A and 5 attached to this Office Action, which illustrates what structure the Examiner is considering to be the first and second grooves and interval as recited. Regardless, it would have been obvious to one of ordinary skill in the art to provide a cliché having first and second grooves with the size relationship as recited, as the particular sizes and arrangements of the grooves of the cliché are dependent upon such factors as the particular configuration of the pattern desired to be printed, the desired thickness of the pattern to be printed, the viscosity of the material being printed on the substrate, etc.

With respect to claim 5, note Kwon et al. teach applying the resist material 104 onto an etching object layer 121 comprises contacting and rotating a printing roll 110 onto the cliché 100 to transfer the resist material to a surface of the printing roll and contacting the resist material 104 formed on the surface of the printing roll to transfer the material to an etching object layer 121 of the substrate 120, as shown in Figures 3(b) and 3(c) in particular.

With respect to claim 6, note Kwon et al. teach applying the resist material onto the etching object layer can also be accomplished by a direct contact printing step as shown in Figure 5 and described in paragraph [0047]. In particular, the applying step shown in Figure 5 includes contacting the etching object layer with the cliché and detaching the substrate from the cliché to transfer the resist material from the grooves to the etching object layer. Note that the direct contact of the cliché and substrate would inherently include application of pressure to the substrate to some extent.

With respect to claims 7-8, note Kwon et al. teach an etching object layer 121 comprising metal (Al) or SiOx (SiO₂) or SiNx in paragraph [0033].

With respect to claim 10, Kwon et al. teach depositing the resist material along the entire surface of the cliché and contacting a doctor blade onto the surface of the cliché to flatten the resist material and fill the resist material into the grooves and remove the resist material that remains on the surface. See column Figure 3(a) and paragraph [0029] in particular.

forming an LCD pattern including an intaglio plate having grooves to form a fine pattern. Yi et al. (US 2003/0081095) teach both an indirect and direct printing method for forming a pattern of an LCD are well known in the art in Figures 2A-2D and 3A-3D.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Leslie J. Evanisko** whose telephone

number is **(571) 272-2161**. The examiner can normally be reached on M-Th
7:30 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the
examiner's supervisor, Andrew H. Hirshfeld can be reached on (571) 272-2168.
The fax phone number for the organization where this application or
proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from
the Patent Application Information Retrieval (PAIR) system. Status information
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<http://pair-direct.uspto.gov>. Should you have questions on access to the
Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-
9197 (toll-free).


Leslie J. Evanisko
Primary Examiner
Art Unit 2854

lje
February 1, 2006

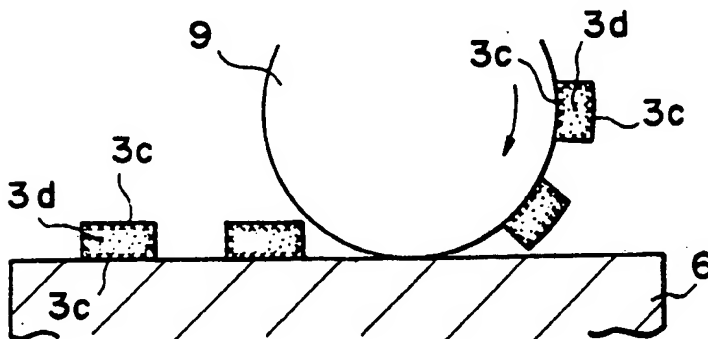
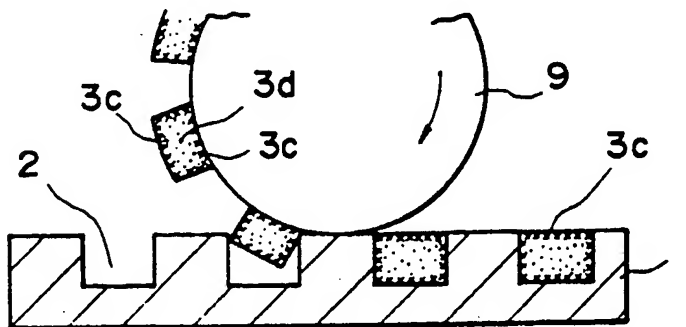
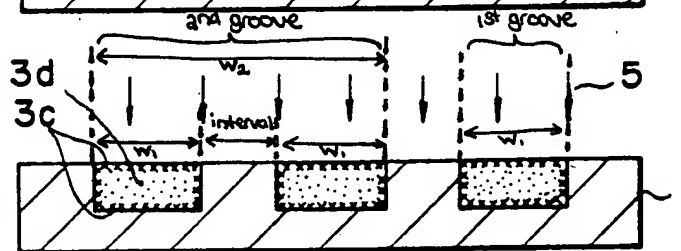
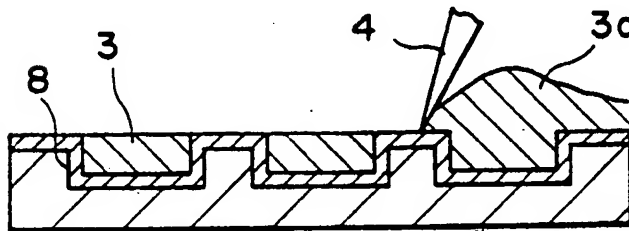
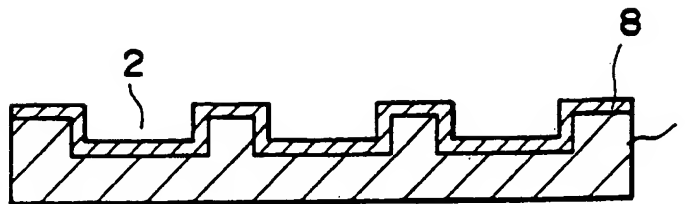


FIG. 8A

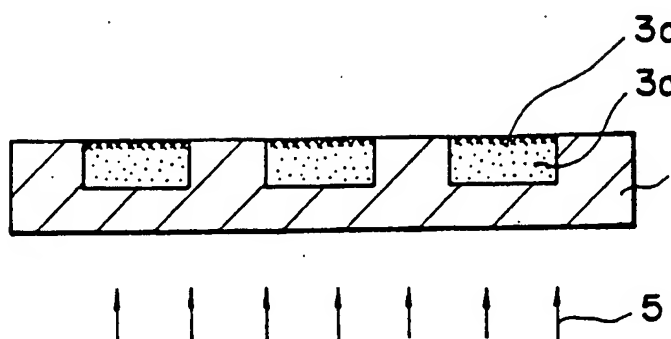


FIG. 8B

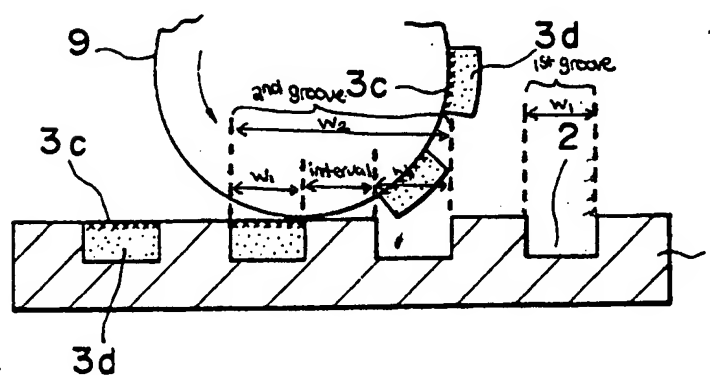


FIG. 8C

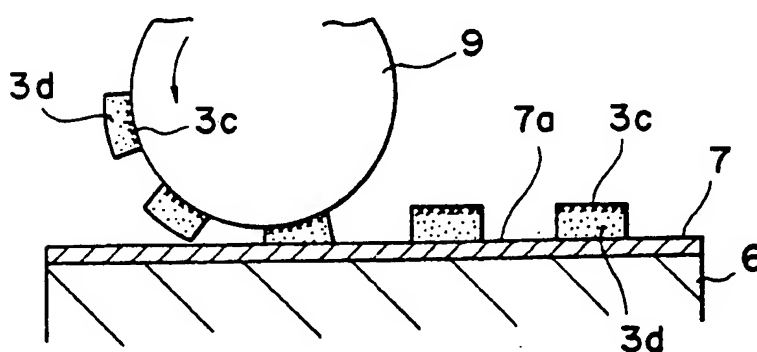


FIG. 9

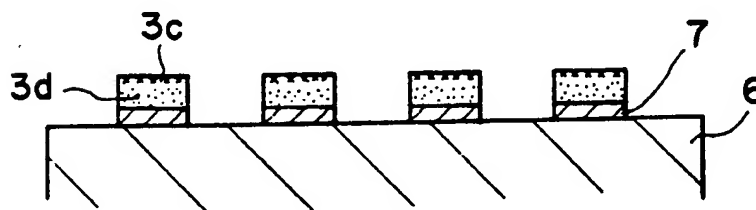


FIG. 4

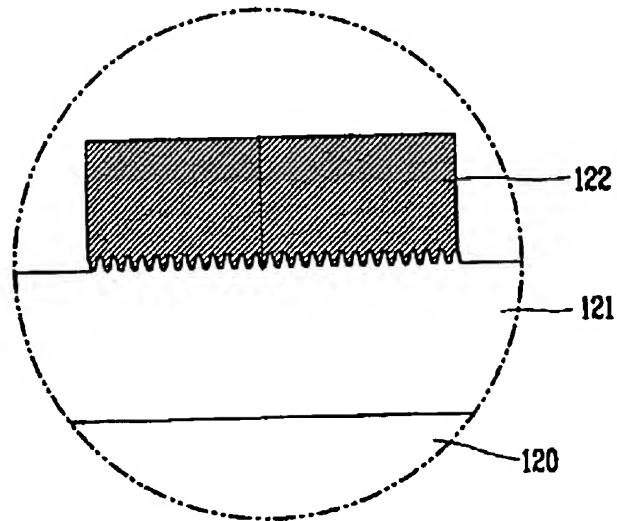


FIG. 5

